

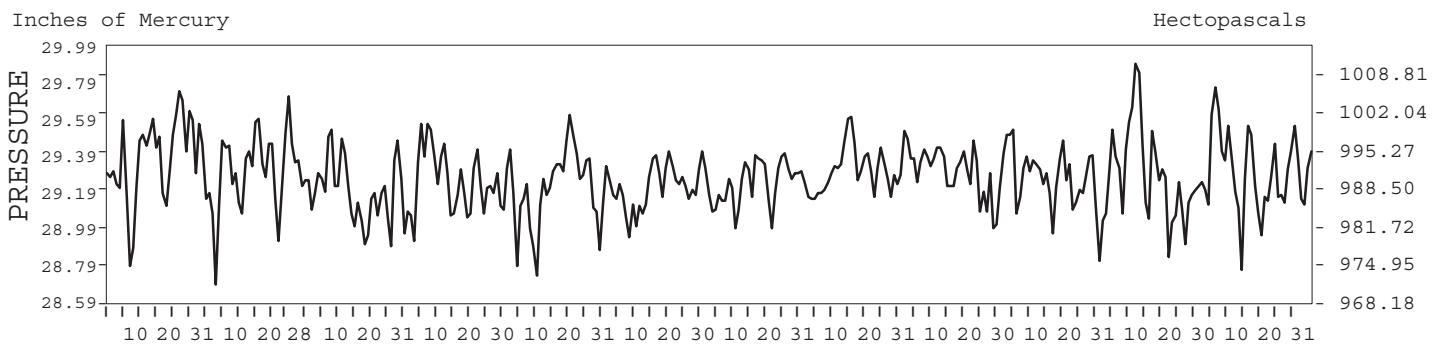
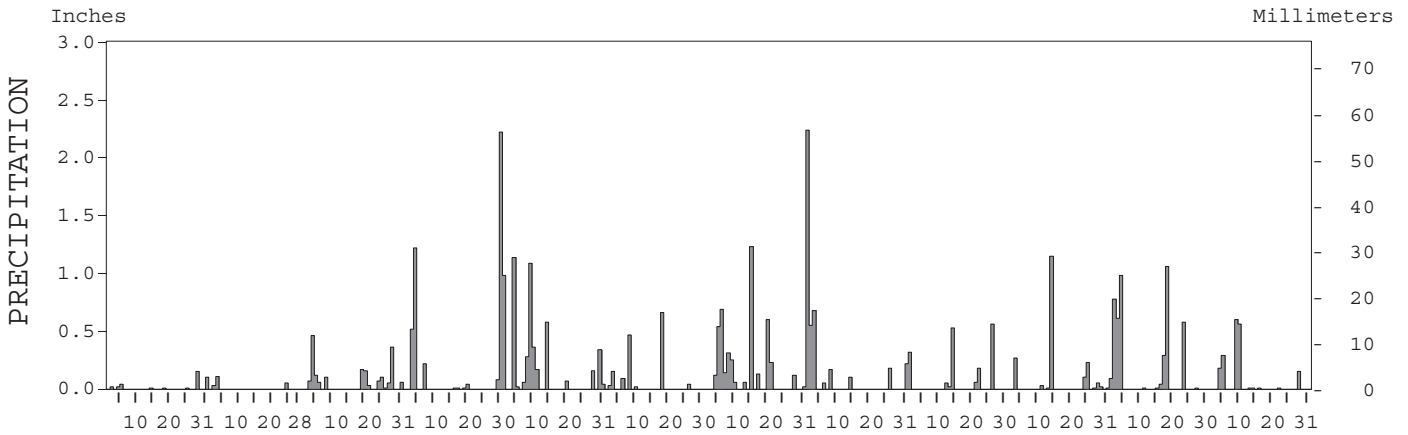
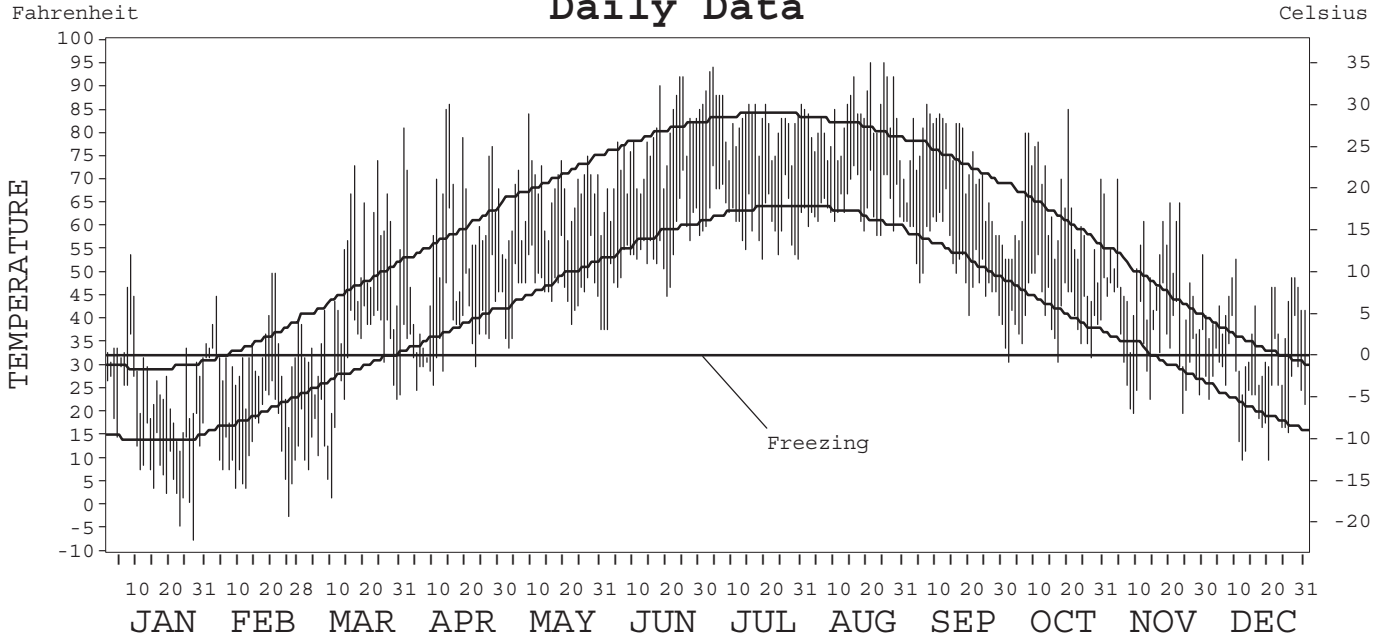
2003

LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



CHICAGO, O'HARE INTERNATIONAL AIRPORT, ILLINOIS (ORD)
ISSN 0198-1846

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE	NATIONAL CLIMATIC DATA CENTER ASHEVILLE, NORTH CAROLINA	DIRECTOR NATIONAL CLIMATIC DATA CENTER
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METEOROLOGICAL DATA FOR 2003

CHICAGO, IL (ORD)

LATITUDE: 41° 59' 10" N LONGITUDE: 87° 54' 51" W ELEVATION (FT.): GRND: 655 BARO: 658 TIME ZONE: CENTRAL (UTC + 6) WBAN: 94846

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	28.3	32.3	46.5	58.7	66.0	76.7	82.9	82.8	73.7	62.4	49.5	38.6	58.2	
	HIGHEST DAILY MAXIMUM	54	50	74	86	84	92	94	95	86	85	70	53	95	
	DATE OF OCCURRENCE	08	21+	24	15	09	25+	04	25+	07	20	04	10	AUG 25+	
	MEAN DAILY MINIMUM	14.3	14.9	26.9	37.9	46.5	54.2	61.8	64.4	53.0	41.2	34.2	24.6	39.5	
	LOWEST DAILY MINIMUM	-7	-2	2	25	32	38	53	58	39	31	20	10	-7	
	DATE OF OCCURRENCE	27	25	10	05	04	02+	30+	24+	30	17+	09+	20+	JAN 27	
	AVERAGE DRY BULB	21.3	23.6	36.7	48.3	56.3	65.5	72.4	73.6	63.4	51.8	41.9	31.6	48.9	
	MEAN WET BULB	18.8	21.4	33.6	41.3	50.3	58.1	64.9	67.3	57.3	47.4	39.3	29.3	44.1	
	MEAN DEW POINT	11.2	14.4	27.6	33.2	44.4	51.9	59.9	63.5	52.1	42.0	34.2	23.3	38.1	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	3	2	5	0	0	0	0	0	10
	MAXIMUM ≤ 32°	22	18	6	1	0	0	0	0	0	0	1	9	57	
MINIMUM ≤ 32°	30	27	19	10	0	0	0	0	0	3	13	26	128		
MINIMUM ≤ 0°	2	1	0	0	0	0	0	0	0	0	0	0	3		
H/C	HEATING DEGREE DAYS	1346	1152	868	507	267	71	0	0	117	404	686	1025	6443	
	COOLING DEGREE DAYS	0	0	0	13	5	93	235	273	74	2	0	0	695	
RH	MEAN (PERCENT)	66	69	71	62	68	63	66	73	69	70	75	71	69	
	HOUR 00 LST	68	71	76	67	78	76	78	84	77	78	77	74	75	
	HOUR 06 LST	72	79	83	75	78	77	80	86	87	86	82	79	80	
	HOUR 12 LST	61	61	58	54	59	48	53	58	53	57	67	63	58	
	HOUR 18 LST	63	65	65	56	58	51	56	64	57	64	71	70	62	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	3	1	4	0	0	0	0	0	0	0	4	1	13	
	THUNDERSTORMS	0	0	1	3	8	1	11	5	1	0	1	0	31	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
SATELLITE (> 12,000 FT.)															
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	29.38	29.32	29.21	29.25	29.21	29.23	29.24	29.32	29.31	29.25	29.29	29.31	29.28	
	MEAN SEA-LEVEL PRESS. (IN.)	30.14	30.07	29.95	29.98		29.94	29.95	30.03	30.03	29.98	30.03	30.06		
WINDS	RESULTANT SPEED (MPH)	6.5	3.1	1.9	3.2	3.8	0.9	1.0	1.9	2.3	2.9	4.3	3.5	1.7	
	RES. DIR. (TENS OF DEGS.)	30	31	28	05	03	33	27	04	23	26	26	26	30	
	MEAN SPEED (MPH)	11.0	10.8	9.6	10.7	10.2	7.8	7.5	6.9	8.0	7.1	10.3	10.5	9.2	
	PREVAIL. DIR. (TENS OF DEGS.)	29	29	04	05	06	04	22	05	26	21	20	28	29	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	29	38	26	31	39	26	39	37	24	29	39	28	39	
	DIR. (TENS OF DEGS.)	30	29	16	06	26	28	02	31	31	30	26	25	26	
	DATE OF OCCURRENCE	09	11	27+	04	11	26+	20	01	22+	11	12	16+	NOV 12	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	37	46	35	38	53	33	47	44	30	35	52	38	53	
DIR. (TENS OF DEGS.)	29	25	16	05	26	27	28	30	30	26	28	01	26		
DATE OF OCCURRENCE	09	11	27	04	11	26	05	01	24+	20+	12	05	MAY 11		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.36	0.19	1.82	4.33	5.29	1.46	4.50	4.19	1.72	1.88	4.46	1.82	32.02	
	GREATEST 24-HOUR (IN.)	0.15	0.11	0.46	2.22	1.16	0.66	1.23	2.24	0.56	1.16	1.35	1.14	2.24	
	DATE OF OCCURRENCE	28	03	04	30	04-05	18	15	01	26	13-14	17-18	09-10	AUG 01	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	8	3	14	9	13	7	14	8	7	10	11	9	113	
PRECIPITATION ≥ 0.10	2	1	7	4	9	3	11	7	4	4	6	5	63		
PRECIPITATION ≥ 1.00	0	0	0	2	2	0	1	1	0	1	1	0	8		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	4.3	1.5	7.1	3.0	0.0	0.0	T	T	0.0	0.0	T	1.5	17.4	
	GREATEST 24-HOUR (IN.)	2.4	1.5	4.0	3.0	0.0	0.0	T	T	0.0	0.0	0.0	0.5	4.0	
	DATE OF OCCURRENCE	28	24	04	07			17	01				23	MAR 04	
	MAXIMUM SNOW DEPTH (IN.)	2	1	5	2	0	0	0	0	0	0	T	1	5	
	DATE OF OCCURRENCE	31+	25+	06+	07							29	25+	MAR 06+	
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	1	1	2	1	0	0	0	0	0	0	0	0	5		

NORMALS, MEANS, AND EXTREMES

CHICAGO, IL (ORD)

LATITUDE: 41° 59' 10" N LONGITUDE: 87° 54' 51" W ELEVATION (FT): GRND: 655 BARO: 658 TIME ZONE: CENTRAL (UTC + 6) WBAN: 94846

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	29.6	34.7	46.1	58.0	69.9	79.2	83.5	81.2	73.9	62.1	47.1	34.4	58.3
	MEAN DAILY MAXIMUM	45	29.7	34.4	45.4	58.4	69.9	79.4	83.7	81.9	74.8	62.9	47.9	34.8	58.6
	HIGHEST DAILY MAXIMUM	45	65	72	88	91	93	104	104	101	99	91	78	71	104
	YEAR OF OCCURRENCE		1989	2000	1986	1980	1977	1988	1995	1991	1985	1963	1978	1982	JUL 1995
	MEAN OF EXTREME MAXS.	45	49.8	54.5	71.8	80.8	87.4	93.0	95.0	92.9	89.8	81.8	68.0	55.9	76.7
	NORMAL DAILY MINIMUM	30	14.3	19.2	28.5	37.6	47.5	57.2	63.2	62.2	53.7	42.1	31.6	20.4	39.8
	MEAN DAILY MINIMUM	45	14.3	18.7	27.9	38.7	48.1	57.4	63.0	62.2	53.9	42.4	31.9	20.3	39.9
	LOWEST DAILY MINIMUM	45	-2.7	-1.9	-8	7	24	36	40	41	28	17	1	-25	-27
	YEAR OF OCCURRENCE		1985	1996	1962	1982	1966	1972	1965	1965	1974	1981	1976	1983	JAN 1985
	MEAN OF EXTREME MINS.	45	-8.6	-2.7	9.4	23.1	34.0	43.5	50.4	51.0	38.6	27.3	15.4	-1.4	23.3
	NORMAL DRY BULB	30	22.0	27.0	37.3	47.8	58.7	68.2	73.3	71.7	63.8	52.1	39.3	27.4	49.0
	MEAN DRY BULB	45	21.9	26.5	36.8	48.4	59.0	68.5	73.3	71.9	64.4	52.7	39.7	27.6	49.2
	MEAN WET BULB	19	22.3	26.1	33.8	43.0	53.0	62.0	66.8	66.1	58.4	47.6	35.0	26.8	45.1
	MEAN DEW POINT	19	17.5	20.7	27.8	36.2	46.9	56.9	62.3	62.2	53.6	42.2	30.2	22.0	39.9
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	*	0.8	3.8	7.2	4.3	1.7	*	0.0	0.0	17.8	
MAXIMUM ≤ 32°	30	17.2	11.9	3.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.1	10.9	45.9	
MINIMUM ≤ 32°	30	28.5	24.1	20.4	7.5	0.6	0.0	0.0	0.0	0.2	4.5	16.1	26.6	128.5	
MINIMUM ≤ 0°	30	5.8	2.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	10.9	
H/C	NORMAL HEATING DEG. DAYS	30	1333	1075	858	513	232	49	6	9	112	401	759	1151	6498
	NORMAL COOLING DEG. DAYS	30	0	0	1	9	48	159	279	233	91	10	0	0	830
RH	NORMAL (PERCENT)	30	75	74	70	66	66	67	69	72	71	70	73	76	71
	HOUR 00 LST	30	77	78	76	73	75	77	79	82	81	77	77	79	78
	HOUR 06 LST	30	78	80	80	78	78	79	82	86	86	82	81	81	81
	HOUR 12 LST	30	69	66	61	56	54	56	56	58	57	57	65	70	60
	HOUR 18 LST	30	74	71	65	58	55	56	58	63	63	64	70	75	64
S	PERCENT POSSIBLE SUNSHINE	16	44	49	51	50	58	67	66	62	59	55	38	43	54
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	46	1.7	1.8	2.2	0.9	1.2	0.6	0.5	0.7	0.4	0.8	1.4	1.9	14.1
	THUNDERSTORMS	46	0.3	0.5	2.0	4.0	5.2	6.5	6.0	6.0	4.1	1.7	1.1	0.6	38.0
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	38	5.5	5.4	5.8	5.5	5.0	4.7	4.4	4.4	4.5	4.7	5.7	5.6	5.1
	MIDNIGHT-MIDNIGHT (OKTAS)	32	5.3	5.0	5.1	5.0	4.5	4.3	4.0	4.0	4.2	4.3	5.4	5.5	4.7
	MEAN NO. DAYS WITH:														
	CLEAR	39	6.8	6.0	4.9	6.0	7.2	7.3	8.0	8.6	8.5	8.6	5.2	5.7	82.8
PARTLY CLOUDY	39	6.2	6.5	8.5	7.6	9.9	11.5	12.1	11.2	9.5	8.5	6.2	5.9	103.6	
CLOUDY	39	18.0	15.7	17.6	16.4	13.9	11.2	10.1	10.4	11.2	13.3	17.7	18.5	174.0	
PR	MEAN STATION PRESSURE (IN)	30	29.30	29.30	29.30	29.20	29.20	29.20	29.30	29.30	29.30	29.31	29.31	29.31	29.28
	MEAN SEA-LEVEL PRES. (IN)	19	30.10	30.10	30.05	29.96	29.97	30.01	30.00	30.04	30.06	30.08	30.06	30.11	30.04
WINDS	MEAN SPEED (MPH)	40	11.6	11.4	11.8	12.0	10.5	9.4	8.6	8.4	9.0	10.1	11.1	11.0	10.4
	PREVAIL. DIR (TENS OF DEGS)	35	27	29	04	04	04	04	23	23	18	21	21	26	21
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	7	37	38	41	43	39	39	39	41	37	43	41	35	43
	DIR. (TENS OF DEGS)		09	29	02	26	26	30	02	24	28	07	23	17	07
	YEAR OF OCCURRENCE		1999	2003	1998	1997	2003	1998	2003	2000	1997	1997	1998	2002	OCT 1997
	MAXIMUM 5-SECOND:														
SPEED (MPH)	7	47	56	52	56	54	48	61	59	48	52	57	48	61	
DIR. (TENS OF DEGS)		09	24	27	25	27	30	20	25	21	07	24	18	20	
YEAR OF OCCURRENCE		1999	1999	2002	1997	1998	1998	1999	2000	2001	1997	1998	2002	JUL 1999	
PRECIPITATION	NORMAL (IN)	30	1.75	1.63	2.65	3.68	3.38	3.63	3.51	4.62	3.27	2.71	3.01	2.43	36.27
	MAXIMUM MONTHLY (IN)	45	4.47	5.56	5.91	7.69	7.14	9.96	8.33	17.10	11.44	8.54	8.22	8.56	17.10
	YEAR OF OCCURRENCE		1999	1997	1976	1983	1970	1993	1982	1987	1961	2001	1985	1982	AUG 1987
	MINIMUM MONTHLY (IN)	45	0.10	0.12	0.63	0.97	0.30	0.95	1.18	0.51	0.02	0.16	0.44	0.23	0.02
	YEAR OF OCCURRENCE		1981	1969	1981	1971	1992	1991	1977	1969	1979	1964	1999	1962	SEP 1979
	MAXIMUM IN 24 HOURS (IN)	45	2.00	3.78	2.39	2.78	3.45	3.79	2.90	9.35	3.00	4.62	2.99	4.53	9.35
	YEAR OF OCCURRENCE		1960	1997	1985	1983	1981	1994	1993	1987	1978	1969	1990	1982	AUG 1987
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	11.3	9.4	11.7	12.6	11.4	10.1	9.5	10.1	8.8	9.5	11.4	11.2	127.0	
PRECIPITATION ≥ 1.00	30	0.2	0.2	0.4	0.9	0.6	1.0	1.0	1.3	0.9	0.5	0.6	0.5	8.1	
SNOWFALL	NORMAL (IN)	30	11.3	8.3	6.0	1.6	0.*	0.0	0.0	0.0	0.0	0.3	1.8	8.7	38.0
	MAXIMUM MONTHLY (IN)	44	34.3	26.2	24.7	11.1	1.6	T	T	T	T	6.6	10.4	35.3	35.3
	YEAR OF OCCURRENCE		1979	1994	1965	1975	1966	1992	1995	1989	1967	1967	1959	1978	DEC 1978
	MAXIMUM IN 24 HOURS (IN)	44	18.6	11.1	10.6	10.9	1.6	T	T	T	T	6.6	5.8	11.0	18.6
	YEAR OF OCCURRENCE		1999	2000	1970	1975	1966	1992	1995	1989	1967	1967	1975	1969	JAN 1999
	MAXIMUM SNOW DEPTH (IN)	43	28	27	20	11	1	0	0	0	0	3	6	17	28
	YEAR OF OCCURRENCE		1979	1967	1965	1975	1966					1989	1975	2000	JAN 1979
	NORMAL NO. DAYS WITH:														
SNOWFALL ≥ 1.0	30	3.5	2.7	2.0	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.6	2.6	11.9	

PRECIPITATION (inches) 2003 CHICAGO, O'HARE INTERNATIONAL AIRPORT, IL (ORD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1974	3.29	2.11	2.40	4.27	5.09	4.69	2.96	2.60	1.47	1.88	2.47	2.12	35.35
1975	3.69	2.48	2.02	5.50	3.02	5.07	2.19	7.37	0.80	1.90	2.53	3.05	39.62
1976	0.85	1.87	5.91	4.05	4.03	2.93	1.44	1.29	1.49	1.41	0.65	0.64	26.56
1977	0.55	0.71	3.67	2.62	1.88	5.12	1.18	5.39	6.07	1.36	2.05	1.96	32.56
1978	1.48	0.43	1.16	3.94	2.80	6.36	4.61	1.96	6.88	1.08	2.24	4.41	37.35
1979	2.81	1.02	4.49	4.92	2.58	4.63	2.19	7.57	0.02	1.49	2.80	2.58	37.10
1980	1.04	1.24	1.96	3.41	3.22	3.42	3.56	8.54	5.65	2.09	1.10	3.43	38.66
1981	0.10	2.35	0.63	6.14	5.85	4.46	4.50	6.60	3.25	1.80	2.46	1.05	39.19
1982	2.90	0.41	4.15	2.78	2.08	1.56	8.33	3.93	1.15	1.88	6.95	8.56	44.68
1983	0.66	2.06	3.56	7.69	6.26	4.11	4.25	2.08	5.41	4.41	5.87	2.99	49.35
1984	1.15	1.39	3.00	4.11	4.49	2.02	3.19	2.10	3.84	3.15	2.64	2.92	34.00
1985	1.48	3.46	4.73	1.48	2.79	1.97	3.75	3.90	1.82	4.98	8.22	1.49	40.07
1986	0.39	2.58	1.49	1.85	3.11	3.49	4.30	1.15	7.12	3.75	1.41	1.09	31.73
1987	1.67	0.99	1.59	2.34	2.21	2.19	4.19	17.10	0.94	1.59	2.77	3.77	41.35
1988	1.88	1.29	2.15	2.08	1.19	1.05	2.74	3.29	3.79	5.05	6.45	2.40	33.36
1989	0.82	0.77	1.67	1.37	1.59	2.01	5.89	7.31	3.91	1.49	2.16	0.46	29.45
1990	1.97	2.25	3.09	1.79	6.85	4.50	2.25	7.75	1.03	4.10	5.60	1.94	43.12
1991	1.41	0.62	3.54	4.00	5.20	0.95	1.32	2.81	2.51	7.36	3.59	1.71	35.02
1992	0.87	1.39	2.67	2.21	0.30	1.35	3.77	3.56	4.31	1.79	5.41	2.49	30.12
1993	3.83	0.82	4.52	4.57	1.83	9.96	4.45	5.74	4.47	2.19	1.52	1.00	44.90
1994	1.77	2.56	1.09	2.20	0.58	6.09	1.62	4.05	1.04	3.23	3.75	1.61	29.59
1995	3.21	0.41	1.43	5.79	4.47	1.40	3.17	3.49	1.04	4.20	3.68	0.59	32.88
1996	1.58	0.71	0.95	2.59	6.95	4.80	3.95	1.45	2.73	2.32	1.48	1.21	30.72
1997	1.38	5.56	1.57	1.76	2.69	3.81	3.04	4.50	1.69	2.75	1.46	1.50	31.71
1998	2.67	1.70	4.29	3.56	3.02	2.90	1.75	6.88	2.34	5.22	2.00	1.20	37.53
1999	4.47	1.64	1.73	7.51	4.46	4.95	3.73	2.30	3.27	1.07	0.44	2.68	38.25
2000	1.35	1.97	1.18	5.15	4.02	4.32	3.58	2.26	3.59	1.12	2.71	2.11	33.36
2001	1.12	2.57	1.30	2.82	3.34	2.61	2.96	12.25	6.05	8.54	1.22	0.99	45.77
2002	1.20	0.96	2.73	3.00	4.39	4.61	2.68	8.06	1.72	1.60	1.04	1.93	33.92
2003	0.36	0.19	1.82	4.33	5.29	1.46	4.50	4.19	1.72	1.88	4.46	1.82	32.02
POR= 45 YRS	1.71	1.50	2.55	3.67	3.40	3.76	3.57	4.32	3.42	2.70	2.72	2.12	35.44

WBAN : 94846

AVERAGE TEMPERATURE (°F) 2003 CHICAGO, O'HARE INTERNATIONAL AIRPORT, IL (

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1974	24.8	27.4	38.6	52.3	56.8	65.5	73.6	70.0	60.5	52.8	40.6	30.2	49.4
1975	27.3	26.2	34.1	43.3	62.3	70.5	75.5	76.3	61.4	55.8	47.2	31.5	51.0
1976	19.9	35.2	42.8	52.3	55.9	70.1	74.0	70.8	62.7	48.3	32.4	19.4	48.7
1977	10.7	26.9	44.9	55.0	67.2	69.3	77.5	71.9	66.0	51.5	40.0	24.2	50.4
1978	15.7	16.8	31.9	47.5	58.3	67.6	72.0	72.4	68.8	51.4	40.8	25.8	47.4
1979	12.5	16.2	36.4	45.5	59.3	69.2	72.0	71.0	66.1	53.3	40.6	33.7	48.0
1980	23.4	21.5	32.6	46.5	59.7	65.3	75.7	75.7	66.0	48.4	39.9	28.0	48.6
1981	22.6	28.0	37.6	51.8	55.3	69.8	72.5	71.2	61.7	49.1	40.8	24.9	48.8
1982	12.2	21.5	35.1	44.5	64.3	62.1	74.1	68.8	62.1	53.2	39.1	36.0	47.8
1983	26.3	30.5	37.4	43.4	53.2	69.7	76.7	77.3	64.6	52.8	41.1	14.3	48.9
1984	17.1	33.9	29.5	45.8	55.5	70.3	70.3	72.8	61.1	54.7	37.9	31.0	48.3
1985	14.4	20.4	39.4	52.6	60.2	63.6	71.4	69.2	65.4	52.5	37.8	17.0	47.0
1986	22.8	24.0	40.4	51.5	59.5	66.3	74.9	68.5	66.8	53.7	36.0	30.6	49.6
1987	25.9	33.9	40.8	50.6	63.4	72.4	76.7	71.9	65.1	47.3	43.9	32.2	52.0
1988	19.8	22.7	38.1	48.2	61.0	71.7	76.8	76.8	65.9	46.1	41.7	27.7	49.7
1989	32.4	19.6	36.6	46.8	57.8	67.5	73.9	71.4	62.0	54.0	37.7	17.4	48.1
1990	33.9	31.3	41.3	49.9	56.2	69.6	71.7	71.9	65.9	51.6	44.7	28.6	51.4
1991	20.8	31.0	40.4	52.0	65.6	71.9	75.5	73.6	63.7	53.2	35.2	30.3	51.1
1992	28.1	33.3	37.5	46.1	56.9	64.9	69.3	67.0	62.7	50.4	38.3	28.6	48.6
1993	26.2	24.4	34.2	45.0	59.7	66.4	74.3	73.3	59.2	49.5	38.7	29.8	48.4
1994	15.9	22.1	38.5	51.1	58.2	70.2	73.4	68.7	66.8	54.7	44.4	34.8	49.9
1995	24.0	26.5	40.2	46.0	58.8	72.3	77.6	79.0	62.5	53.7	32.8	26.3	50.0
1996	23.4	26.0	30.8	45.2	55.0	68.0	69.9	72.3	63.5	51.9	33.4	27.7	47.3
1997	19.3	29.0	37.9	45.2	53.8	68.3	73.2	69.5	64.2	53.2	36.4	31.5	48.5
1998	29.6	38.7	39.0	49.8	64.8	69.3	74.5	73.5	67.7	55.5	44.8	34.7	53.5
1999	22.6	34.0	35.6	49.6	61.7	70.4	78.4	70.3	63.4	52.9	45.1	29.9	51.2
2000	25.3	34.1	44.2	47.2	62.0	67.3	71.1	72.4	64.7	56.1	37.0	16.0	49.8
2001	24.6	26.1	34.2	52.5	60.0	67.4	74.6	73.2	61.9	52.1	48.2	33.4	50.7
2002	31.9	32.2	34.6	49.9	55.2	71.0	77.1	73.2	67.4	49.8	37.6	30.2	50.8
2003	21.3	23.6	36.7	48.3	56.3	65.5	72.4	73.6	63.4	51.8	41.9	31.6	48.9
POR= 45 YRS	21.9	26.5	36.8	48.5	59.2	68.5	73.3	71.8	64.4	52.7	39.8	27.5	49.2

HEATING DEGREE DAYS (base 65°F) 2003 CHICAGO, O'HARE INTERNATIONAL AIRPORT, IL (OR

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1974-75	0	1	176	384	724	1072	1160	1078	951	643	152	30	6371
1975-76	1	0	147	303	531	1033	1392	859	681	411	285	17	5660
1976-77	0	9	119	522	973	1408	1679	1060	616	332	115	41	6874
1977-78	0	8	42	413	741	1254	1521	1346	1020	518	264	46	7173
1978-79	1	4	59	418	718	1206	1622	1360	879	580	233	30	7110
1979-80	16	19	62	382	722	967	1281	1254	995	558	198	83	6537
1980-81	0	3	71	511	746	1140	1308	1031	846	397	313	6	6372
1981-82	8	6	135	489	719	1236	1632	1213	922	608	93	118	7179
1982-83	7	37	152	372	772	891	1194	961	847	643	364	38	6278
1983-84	16	0	125	383	714	1568	1479	894	1095	575	300	18	7167
1984-85	19	1	189	320	807	1046	1563	1245	787	418	183	103	6681
1985-86	0	6	141	380	813	1480	1302	1142	765	417	202	74	6722
1986-87	3	29	64	343	863	1060	1205	866	742	432	162	14	5783
1987-88	4	19	74	541	629	1011	1396	1221	828	503	176	40	6442
1988-89	0	9	63	583	693	1149	1003	1265	882	540	261	43	6491
1989-90	0	5	131	344	813	1471	956	938	733	491	271	33	6186
1990-91	10	5	103	425	605	1120	1365	945	756	393	142	13	5882
1991-92	0	0	163	367	887	1066	1137	913	847	560	284	77	6301
1992-93	9	37	136	449	795	1122	1196	1133	948	595	184	69	6673
1993-94	0	3	185	479	784	1084	1516	1197	817	433	253	51	6802
1994-95	1	23	63	322	611	932	1262	1074	760	561	199	25	5833
1995-96	1	0	150	349	958	1193	1284	1124	1054	589	343	58	7103
1996-97	9	0	119	399	940	1148	1410	1003	832	587	344	53	6844
1997-98	9	4	77	406	852	1030	1091	732	813	449	87	69	5619
1998-99	0	0	35	289	598	933	1309	860	903	456	149	34	5566
1999-00	1	4	110	368	591	1081	1224	892	640	528	148	57	5644
2000-01	6	3	112	286	833	1512	1248	1085	948	374	205	88	6700
2001-02	5	0	128	394	496	973	1018	913	934	490	331	33	5715
2002-03	0	0	58	473	811	1072	1346	1152	868	507	267	71	6625
2003-	0	0	117	404	686	1025							

WBAN : 94846

COOLING DEGREE DAYS (base 65°F) 2003 CHICAGO, O'HARE INTERNATIONAL AIRPORT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1974	0	0	0	10	21	83	274	162	48	12	0	0	610
1975	0	0	0	0	76	203	332	358	46	24	1	0	1040
1976	0	0	0	36	6	178	286	196	56	8	0	0	766
1977	0	0	0	39	191	178	395	229	76	0	0	0	1108
1978	0	0	0	0	60	132	227	243	181	2	0	0	845
1979	0	0	0	2	61	164	241	213	99	26	0	0	806
1980	0	0	0	10	43	101	338	342	107	2	0	0	943
1981	0	0	0	9	20	157	248	204	44	0	0	0	682
1982	0	0	0	0	79	38	295	161	69	14	0	0	656
1983	0	0	1	0	4	189	385	388	122	10	0	0	1099
1984	0	0	0	5	11	184	190	254	77	8	0	0	729
1985	0	0	0	53	42	71	204	142	158	0	0	0	670
1986	0	0	7	17	37	118	318	145	123	3	0	0	768
1987	0	0	0	6	116	241	377	238	83	0	1	0	1062
1988	0	0	0	5	59	247	373	383	96	1	0	0	1164
1989	0	0	2	0	44	121	282	207	48	11	0	0	715
1990	0	0	7	43	8	179	226	224	137	11	1	0	836
1991	0	0	0	11	167	226	334	273	132	10	0	0	1153
1992	0	0	0	1	40	79	152	106	75	4	0	0	457
1993	0	0	0	0	28	118	294	266	19	5	0	0	730
1994	0	0	0	23	47	212	268	143	126	10	0	0	829
1995	0	0	0	0	13	254	398	445	81	8	0	0	1199
1996	0	0	0	0	41	154	166	235	79	2	0	0	677
1997	0	0	0	0	4	158	265	154	59	44	0	0	684
1998	0	0	13	0	88	205	301	267	123	5	0	0	1002
1999	0	0	0	0	52	201	422	176	70	2	2	0	925
2000	0	0	3	0	63	131	199	240	112	18	0	0	766
2001	0	0	0	7	58	168	309	262	44	1	0	0	849
2002	0	0	0	44	37	220	380	259	134	11	0	0	1085
2003	0	0	0	13	5	93	235	273	74	2	0	0	695

SNOWFALL (inches) 2003 CHICAGO, O'HARE INTERNATIONAL AIRPORT, IL (ORD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1974-75	0.0	0.0	0.0	0.0	1.0	9.4	3.5	8.2	4.5	11.1	0.0	0.0	37.7
1975-76	0.0	0.0	0.0	0.0	6.4	6.8	10.0	1.6	1.9	0.8	T	0.0	27.5
1976-77	0.0	0.0	0.0	1.6	0.5	6.5	7.2	4.0	4.9	T	0.0	0.0	24.7
1977-78	0.0	0.0	0.0	0.0	5.2	12.7	21.9	7.9	4.5	0.2	0.0	0.0	52.4
1978-79	0.0	0.0	0.0	0.0	5.2	35.3	34.3	6.8	2.0	0.1	0.0	0.0	83.7
1979-80	0.0	0.0	0.0	0.0	4.0	0.9	6.2	14.7	11.6	4.2	0.0	0.0	41.6
1980-81	0.0	0.0	0.0	T	5.1	9.7	2.0	15.9	2.3	0.0	0.0	0.0	35.0
1981-82	0.0	0.0	0.0	T	3.6	4.9	21.1	4.8	14.3	10.6	0.0	0.0	59.3
1982-83	0.0	0.0	0.0	0.0	0.4	2.1	5.0	8.9	9.0	1.2	0.0	0.0	26.6
1983-84	0.0	0.0	0.0	0.0	1.0	16.5	17.2	1.9	9.7	2.7	0.0	0.0	49.0
1984-85	0.0	0.0	0.0	0.0	T	6.6	18.9	13.3	0.3	T	0.0	0.0	39.1
1985-86	0.0	0.0	0.0	0.0	1.1	5.2	6.9	10.9	4.1	0.8	0.0	0.0	29.0
1986-87	0.0	0.0	0.0	T	3.8	0.4	17.3	T	4.7	T	0.0	0.0	26.2
1987-88	0.0	0.0	0.0	0.1	1.0	18.7	5.4	15.5	1.9	T	0.0	0.0	42.6
1988-89	0.0	0.0	0.0	T	0.9	5.0	0.4	15.1	2.0	0.6	0.5	0.0	24.5
1989-90	0.0	T	0.0	6.3	3.9	5.4	3.2	13.6	1.3	0.1	T	0.0	33.8
1990-91	0.0	0.0	0.0	T	T	3.2	11.1	3.3	5.9	T	0.0	0.0	23.5
1991-92	0.0	0.0	0.0	T	1.2	7.6	5.6	1.3	11.6	1.1	0.0	T	28.4
1992-93	T	0.0	0.0	0.3	0.2	5.7	15.2	8.0	13.8	3.7	0.0	0.0	46.9
1993-94	0.0	0.0	0.0	T	0.2	1.2	14.2	26.2	T	T	0.0	0.0	41.8
1994-95	0.0	0.0	0.0	0.0	T	7.0	13.1	0.4	3.5	0.1	0.0	0.0	24.1
1995-96	T	0.0	0.0	T	3.9	9.9	5.9	0.3	3.9	T	T	0.0	23.9
1996-97	0.0	0.0											
1997-98							11.0	T	8.2	0.0	0.0	T	
1998-99	0.0	0.0	0.0	0.0	0.2	1.0	29.6	1.9	18.2	0.0	0.0	0.0	50.9
1999-00	0.0	0.0	0.0	0.0	0.0	3.5	13.6	11.6	T	1.6	0.0	T	30.3
2000-01	0.0	0.0	0.0	T	0.1	30.9	1.5	2.2	4.2	0.3	T	T	39.2
2001-02	T	0.0	0.0	T	0.0	1.6	15.5	1.8	11.2	1.0	0.0	T	31.1
2002-03	0.0	0.0	0.0	0.0	4.7	8.0	4.3	1.5	7.1	3.0	0.0	0.0	28.6
2003-	T	T	0.0	0.0	T	1.5							
POR= 43 YRS	T	T	T	0.4	2.0	8.2	10.7	7.6	6.6	1.6	0.1	T	37.2

WBAN : 94846

REFERENCE NOTES :

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1971 - 2000). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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2003
CHICAGO, O'HARE INTERNATIONAL AIRPORT,
ILLINOIS (ORD)

Chicago is located along the southwest shore of Lake Michigan and occupies a plain which, for the most part, is only some tens of feet above the lake. Lake Michigan averages 579 feet above sea level. Natural water drainage over most of the city would be into Lake Michigan, and from areas west of the city is into the Mississippi River System. But actual drainage over most of the city is artificially channeled also into the Mississippi system. Topography does not significantly affect air flow in or near the city except that lesser frictional drag over Lake Michigan causes winds to be frequently stronger along the lakeshore, and often permits air masses moving from the north to reach shore areas an hour or more before affecting western parts of the city.

Chicago is in a region of frequently changeable weather. The climate is predominately continental, ranging from relatively warm in summer to relatively cold in winter. However, the continentality is partially modified by Lake Michigan, and to a lesser extent by other Great Lakes. In late autumn and winter, air masses that are initially very cold often reach the city only after being tempered by passage over one or more of the lakes. Similarly, in late spring and summer, air masses reaching the city from the north, northeast, or east are cooler because of movement over the Great Lakes. Very low winter temperatures most often occur in air that flows southward to the west of Lake Superior before reaching the Chicago area. In summer the higher temperatures are with south or southwest flow and are therefore not influenced by the lakes, the only modifying effect being a local lake breeze. Strong south or southwest flow may overcome the lake breeze and cause high temperatures to extend over the entire city.

During the warm season, when the lake is cold relative to land, there is frequently a lake breeze that reduces daytime temperature near the shore, sometimes by 10 degrees or more below temperatures farther inland. When the breeze off the lake is light this effect usually reaches inland only a mile or two, but with stronger on-shore winds the whole city is cooled. On the other hand, temperatures at night are warmer near the lake so that 24-hour averages on the whole are only slightly different in various parts of the city and suburbs.

At the O'Hare International Airport temperatures of 96 degrees or higher occur in about half the summers, while about half the winters have a minimum as low as -15 degrees. The average occurrence of the first temperature as low as 32 degrees in the fall is mid-October and the average occurrence of the last temperature as low as 32 degrees in the spring is late April.

Precipitation falls mostly from air that has passed over the Gulf of Mexico. But in winter there is sometimes snowfall, light inland but locally heavy near the lakeshore, with Lake Michigan as the principal moisture source. The heavy lakeshore snow occurs when initially colder air moves from the north with a long trajectory over Lake Michigan and impinges on the Chicago lakeshore. In this situation the air mass is warmed and its moisture content increased up to a height of several thousand feet. Snowfall is produced by upward currents that become stronger, because of frictional effects, when the air moves from the lake onto land. This type of snowfall therefore tends to be heavier and to extend farther inland in south-shore areas of the city and in Indiana suburbs, where the angle between wind-flow and shoreline is greatest. The effect of Lake Michigan, both on winter temperatures and lake-produced snowfall, is enhanced by non-freezing of much of the lake during the winter, even though areas and harbors are often ice-choked.

Summer thunderstorms are often locally heavy and variable, parts of the city may receive substantial rainfall and other parts none. Longer periods of continuous precipitation are mostly in autumn, winter, and spring. About one-half the precipitation in winter, and about 10 percent of the yearly total precipitation, falls as snow. Snowfall from month to month and year to year is greatly variable. There is a 50 percent likelihood that the first and last 1-inch snowfall of a season will occur by December 5 and March 20, respectively.

Channeling of winds between tall buildings often causes locally stronger gusts in the central business area. However, the nickname, windy city, is a misnomer as the average wind speed is not greater than in many other parts of the U.S.

STATION LOCATION

CHICAGO, O'HARE INTERNATIONAL
AIRPORT, ILLINOIS

LOCATION	Occupied From	Occupied To	Airline Distances and Directions from previous Location	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUTOMATIC OBSERVING EQUIPMENT *	* TYPE M = AMOS T = AUTOB S = ASOS W = AWOS REMARKS
						SEA LEVEL		GROUND									
						GROUND TEMPERATURE	SITE	WIND INSTRUMENT	EXTREME THERMOMETERS	PSYCHROMETER	SUNSHINE SWITCH	TIPPING BUCKET	WEIGHING RAIN GAGE	8 INCH RAIN GAGE	HYGROMETER		
*NOTES: <u>AIRPORT</u> O'Hare Corporate Tower II, Rosemont, IL	01/19/89	12/07/93	1.2 mi. NE	42°00'	87°53'	658	v20	5	5	v24 w90		x4	4	v4		WSO closed and consolidated with WSFO. v. Not moved 01/19/89. w. Moved 08/31/90. x. Shield added 02/07/92. WSO moved 12/07/93	
Airport Post Office	12/07/93	02/01/96	2 mi. S.	41°59'	87°55'												
O'Hare International AP	02/01/96	Present	NA	41°59'	87°55'	2655									S	ASOS Commissioned 02/01/96 z. Ground elevation.	

For Hard Copy Subscription:

Price and ordering information: NCDC Subscribing Service Center, 310 State Route 956, Building 300, Rocket Center, WV 26726.

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